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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN C. PARSONS, STEVEN P. PAULS SR.,
and MICHAEL EKNOIAN

Appeal 2009-003195
Application 09/883,520
Technology Center 1700

Decided: September 04, 2009

Before EDWARD C. KIMLIN, ADRIENE LEPIANE HANLON, and
TERRY J. OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 2-6, 8-13, 16 and 18-27, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a non-woven material having a binder film that is dispersible in tap water and non-dispersible in aqueous solutions containing 0.5 wt% or more of an inorganic salt. Claim 26 is illustrative:

26. A non-woven material comprising:

- a) a web of fibers; and
- b) a latex polymer binder applied to the web of fibers, wherein said latex polymer binder has a glass transition temperature of from -40°C to 105°C and comprises a polymer component which includes from 1 to 100 weight percent of a hydrophilic monomer, and from 0 to 99 percent by weight of at least one non-hydrophilic monomer; and

wherein said latex polymer composition forms films that are dispersible rather than soluble in tap water in that a film formed from the polymer breaks into small discrete particles that can be filtered out, and non-dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt.

The References

Lau	5,521,266	May 28, 1996
Komatsu	5,631,317	May 20, 1997
Tsai	5,976,694	Nov. 2, 1999

The Rejections

The claims stand rejected as follows:

- 1) claims 8, 10, 13, 18-24, 26 and 27 under 35 U.S.C. § 102(b) or, alternatively, under 35 U.S.C. § 103, over Lau;
- 2) claims 8, 10, 13, 18-23, 26 and 27 under 35 U.S.C. § 102(b) or, alternatively, under 35 U.S.C. § 103, over Komatsu;

- 3) claims 8, 10, 13, 18-23, 26 and 27 under 35 U.S.C. § 103 over Komatsu in view of Lau;
- 4) claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Lau in view of Tsai;
- 5) claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Komatsu in view of Tsai; and
- 6) claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Komatsu in view of Lau and Tsai.

OPINION

We affirm the Examiner's rejections.

*Rejection of claims 8, 10, 13, 18-24, 26 and 27 under
35 U.S.C. § 102(b) or 35 U.S.C. § 103 over Lau*

Issue

Have the Appellants shown reversible error in the Examiner's determination that Lau discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt?

Findings of Fact

Lau complexes at least one monomer having low water solubility with a macromolecular organic compound having a hydrophobic cavity, and polymerizes from about 0.1 to about 100 wt% of the complexed monomer with about 0 to about 99.9 wt% of at least one monomer having high water solubility (col. 2, ll. 27-40). The polymerization can be emulsion polymerization (col. 2, ll. 42-44; col. 5, ll. 63-66).

Analysis

The Appellants argue that “[t]he Lau reference does not relate to salt sensitive products at all and is not relevant to the claimed subject matter” (Br. 12). The Appellants rely upon a Declaration under 37 C.F.R. § 1.132 by Steven P. Pauls filed July 24, 2007 wherein Pauls states (Decl. ¶ 5) that based upon his experience, because the emulsion polymers in Lau’s Table 4.2 contain 2 wt% or less of methacrylic acid, they are not dispersible in water and their dispersibility would not change in response to salt concentration (Br. 16-17; Reply Br. 4).

Because Lau’s polymers containing 1 or 2 wt% of methacrylic acid (a hydrophilic monomer) fall within the scope of the Appellants’ claims, evidence, not merely Pauls’ unsupported statement, is needed to show that Lau’s polymers do not have the dispersibility characteristics recited in Appellants’ claims. The Appellants have not provided such evidence.

The Appellants argue, regarding the obviousness rejection of claim 27, that it is surprising that divalent ions do not inhibit the dispersibility of the films in water (Br. 18).¹

That argument is not persuasive because the Appellants have not provided supporting evidence. Arguments of counsel cannot take the place

¹ For written descriptive support for the claim 27 limitation “divalent ions do not inhibit redispersibility in water”, the Appellants rely upon co-pending application no. 09/540,033, incorporated by reference (Spec. 6:21), now patent no. 6,683,129 B1 (Br. 7). The Appellants rely upon column 4, lines 19-48 of the ‘129 patent, which states that “films derived from the aqueous emulsions of the present invention will readily disperse in the presence of water. In addition, the novel polymer film will also disperse in hard water since divalent ions do not inhibit the redispersibility by the film derived from emulsions” (col. 4, ll. 33-38). Thus, it appears that by “redispersibility” the patent means “dispersibility”.

of evidence. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979); *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978); *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

The Appellants rely (Reply Br. 2) regarding the obviousness rejection upon a Declaration under 37 C.F.R. § 1.132 by John C. Parsons, filed September 14, 2005, wherein Parsons argues that it is unexpected that although the Appellants' non-water-soluble polymers have much lower water solubility than acrylic acid, the binders are dispersible in tap water and non-dispersible in salt solution (Decl. ¶ 6). Parsons argues that "[o]ne of skill in the art would not expect this result; especially because of the fact that the polymers are not water soluble." *See id.*

It does not appear that it would have been unexpected by one of ordinary skill in the art that a polymer which is less water soluble than acrylic acid would be water dispersible. It appears that if the polymer were as water soluble as acrylic acid it would be water soluble, and if the polymer were sufficiently less water soluble than acrylic acid it would be water insoluble. It appears that somewhere between those extremes a polymer would be water dispersible, depending upon the relative amounts of hydrophilic and hydrophobic monomers and how hydrophilic and hydrophobic they are. Hence, Parsons' unsupported argument is not persuasive of unexpected results.

Conclusion of Law

The Appellants have not shown reversible error in the Examiner's determination that Lau discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by

divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt.

*Rejection of claims 8, 10, 13, 18-23, 26 and 27 under
35 U.S.C. § 102(b) or 35 U.S.C. § 103 over Komatsu*

Issue

Have the Appellants shown reversible error in the Examiner's determination that Komatsu discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt?

Findings of Fact

Komatsu discloses "a salt-sensitive polymer which is insoluble in an aqueous salt solution of a low concentration such as 0.2%" (col. 2, ll. 22-24). The polymer is made by solution polymerization from acrylic acid (a hydrophilic monomer) and vinyl esters (indicated by Lau (col. 4, ll. 9-26) to be hydrophobic monomers) (Komatsu, col. 2, ll. 41-67). Addition of water forms a polymer emulsion (col. 5, ll. 32-40). Some of the exemplified polymers are dispersible in tap water and insoluble in 0.2 wt% aqueous common salt solution (Example 4, col. 8, ll. 20-23; Example 7, col. 9, ll. 56-59; Example 8, col. 10, ll. 7-10).

Analysis

The Appellants argue that Komatsu's emulsion is not obtained by emulsion polymerization (Br. 20).

Although Komatsu's emulsion is made by adding water after solution polymerization rather than by emulsion polymerization, because the films produced from the polymers in Komatsu's Examples 4, 7 and 8 are

dispersible in tap water and insoluble in a salt solution, they appear to be the same or substantially the same as the Appellants' films.

The Appellants argue, in reliance upon a Declaration under 37 C.F.R. § 1.132 by Steven P. Pauls filed March 6, 2007, that for a given solids content, Komatsu's solution polymerization produces higher viscosity (such as 500 cps for a 17.9% solids content) than emulsion polymerization (such as 136 cps for a 29.7% solids content) (Br. 22; Decl. ¶ 9).

That argument is not convincing in view of Komatsu's disclosures of an emulsion having a viscosity of 38 cps at a solids content of 17.2% and an emulsion having a viscosity of 105 cps at an 18.0% solids content, both of which produce a film that is water dispersible in tap water and insoluble in 0.2% common salt solution (col. 9, ll. 52-58; col. 10, ll. 3-10).

The Appellants argue, with respect to claims 22 and 23, that Komatsu does not recognize that a colloid stabilizer can be critical to salt sensitivity (Br. 22).

Regardless of whether Komatsu includes such a disclosure, because the films in Examples 4, 7 and 8 are salt sensitive, it appears that they are the same or substantially the same as those of the Appellants. The Appellants' disclosure that the colloid stabilizer can be formed in situ and can be poly(methacrylic acid) (Spec. 6:4-7) indicates that Komatsu's process may form a corresponding material in situ from Komatsu's acrylic acid.

The Appellants argue, regarding claim 27, that Komatsu's disclosure that "[w]hen a salt comprising a polyvalent cation such as a calcium salt or magnesium salt is added, the polymer is coagulated to make the formation of the self-dispersing emulsion impossible" (col. 4, ll. 56-59) indicates that the polymers are not dispersible (Br. 23).

In the portion of Komatsu relied upon by the Appellants, Komatsu is disclosing that the polymer will not self-disperse into an emulsion in the presence of a polyvalent cation. Komatsu discloses that once the film is formed, it can be dispersible in tap water which contains calcium (a divalent cation) (col. 6, ll. 61-63; col. 8, ll. 20-23; col. 9, ll. 56-59; col. 10, ll. 7-10).

Conclusion of Law

The Appellants have not shown reversible error in the Examiner's determination that Komatsu discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt.

*Rejection of claims 8, 10, 13, 18-23, 26 and 27 under
35 U.S.C. § 103 over Komatsu in view of Lau*

Issue

Have the Appellants shown reversible error in the Examiner's determination that Komatsu and Lau would have rendered prima facie obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt?

Analysis

The Appellants argue that neither Komatsu nor Lau discloses or suggests the above-discussed claim features (Br. 23-24).

That argument is not persuasive for the reasons given above with respect to the rejections over each reference separately. Moreover, Komatsu's disclosure that the film produced from the emulsion can be

dispersible in tap water and insoluble in a 0.2% common salt solution, thereby enabling a product which uses the film as a binder to maintain its strength when in contact with body fluid and be easily dispersed in a flush toilet (col. 1, ll. 34-44; col. 8, ll. 20-23; col. 9, ll. 56-59; col. 10, ll. 7-10), would have led one of ordinary skill in the art, through no more than ordinary creativity, to select Lau's hydrophilic and hydrophobic monomers and their relative amounts so as to produce a film which provides that benefit. *See KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (In making an obviousness determination one "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ").

Conclusion of Law

The Appellants have not shown reversible error in the Examiner's determination that Komatsu and Lau would have rendered *prima facie* obvious, to one of ordinary skill in the art, a film that is dispersible rather than soluble in tap water, has dispersibility in water that is not inhibited by divalent ions (claim 27), and is non-dispersible in aqueous solutions containing 0.5 wt % or more of an inorganic salt.

*Rejections of claims 2-6, 9, 11, 12, 16 and 25 under
35 U.S.C. § 103 over Lau in view of Tsai,
over Komatsu in view of Tsai, and over
Komatsu in view of Lau and Tsai*

The Appellants argue that Tsai does not remedy the deficiencies in Lau and Komatsu (Br. 25-26).

As discussed above, those deficiencies do not exist. Accordingly, we are not persuaded of reversible error in the rejections of claims 2-6, 9, 11,

12, 16 and 25 under 35 U.S.C. § 103 over Lau in view of Tsai, over Komatsu in view of Tsai, and over Komatsu in view of Lau and Tsai.

DECISION/ORDER

The rejections of claims 8, 10, 13, 18-24, 26 and 27 under 35 U.S.C. § 102(b) or, alternatively, under 35 U.S.C. § 103, over Lau; claims 8, 10, 13, 18-23, 26 and 27 under 35 U.S.C. § 102(b) or, alternatively, under 35 U.S.C. § 103, over Komatsu; claims 8, 10, 13, 18-23, 26 and 27 under 35 U.S.C. § 103 over Komatsu in view of Lau; claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Lau in view of Tsai; claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Komatsu in view of Tsai, and claims 2-6, 9, 11, 12, 16 and 25 under 35 U.S.C. § 103 over Komatsu in view of Lau and Tsai are affirmed.

It is ordered that the Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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